

CONTINUOUS PREPARATION OF 4,4'-DIISOPROPYLBIPHENYL

ABSTRACT

[0039] A continuous flow process has been discovered for the highly selective isopropylation of biphenyl to 4,4'-diisopropylbiphenyl. Thus biphenyl and propene in decalin are passed through a solid zeolite catalyst bed contained in a flow reactor at moderate temperature (220°C) and pressure (10-30 atm) together with a continuous stream of nitrogen. Surprisingly, catalyst performance is improved by the continuous introduction of the nitrogen into the reactor along with the reactants and solvent. Thus, improved performance as measured by higher percent conversion to products, higher yields of diisopropylated products and lower yields of undesired triisopropylated products are observed when a diluent gas such as nitrogen is employed. The alkylation process is selective for 4,4'-diisopropylbiphenyl using a zeolite catalyst, preferably a dealuminated mordenite in which the molar ratio of SiO_2 to Al_2O_3 moieties is in a range between about 10 to 1 and about 500 to 1.